

# **The Community-Engaged Audiologist: Expanding Our Reach**



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2017 CAA Conference & Exhibition



October 12, 2017 ~ Ottawa, ON

# Acknowledgements



## **Interdisciplinary Partnerships:**

- Mariposa Community Health Center
- UA Department of Speech, Language, and Hearing Sciences
- UA Mel and Enid Zuckerman College of Public Health
- UA Department of Spanish and Portuguese
- Arizona Prevention Research Center



# Acknowledgements

## **Funding:**

NIH/NIDCD R21/R33 DC013681

University of Arizona Foundation

James S. and Dyan Pignatelli/Unisource Clinical Program in  
Audiologic Rehabilitation for Adults



# Overview

- 1. Apply a public health perspective to hearing loss.
- 2. Understand social determinants of health which impact access to hearing health care.
- 3. Learn how partnership with community health workers can raise community awareness of hearing loss and connect older adults with access to hearing health care.



# **Is there a need for hearing healthcare?**

- Magnitude and trajectory of need

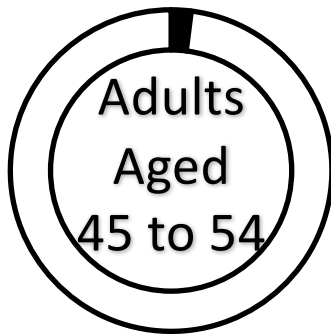


# World Health Organization Statistics

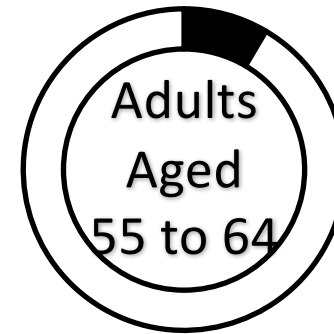
- More than 5% of the global population has “disabling” hearing loss
  - HL > 40 dB HL in better ear (Adults)
  - HL > 30 dB HL in better ear (Kids)
  - Large part of these individuals are from countries of middle- and low-income
- Estimated that 1/3 of adults older than age 65 have disabling hearing loss
- What is the global financial burden of untreated hearing loss?
  - **750 billion international dollars annual cost due to untreated hearing loss**

## Percentage of adults with disabling hearing loss in the United States as a function of age

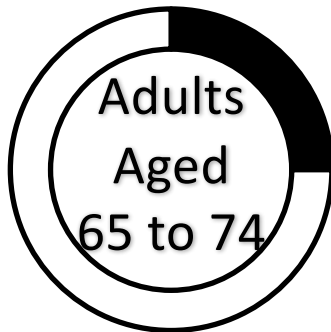
**2%**



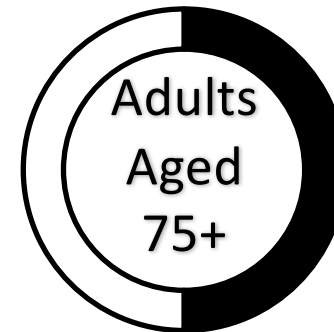
**8.5%**



**25%**

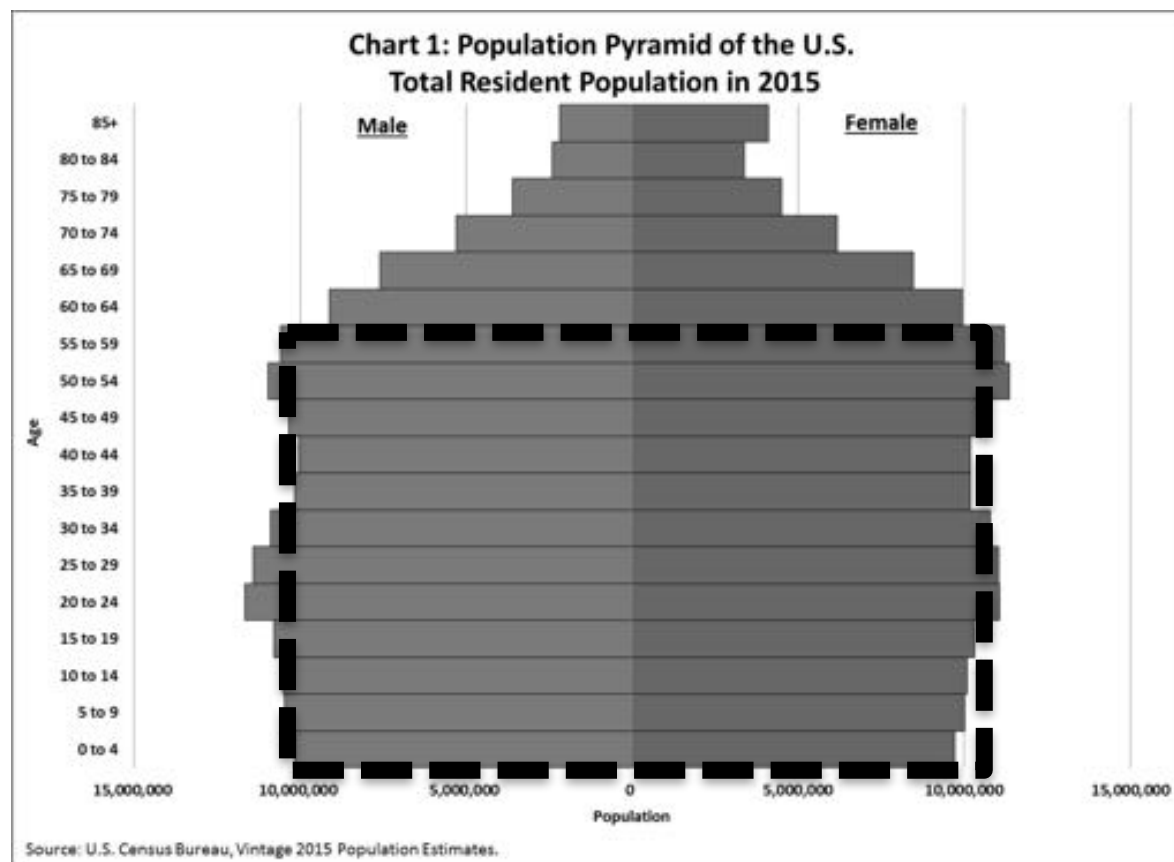


**50%**



# 2015 U.S. Population Pyramid

Percentage of people effected increases with age and we have an increase in the number of older adults.





## **Influx of older adults needing hearing healthcare**



***Turning up the heat!***

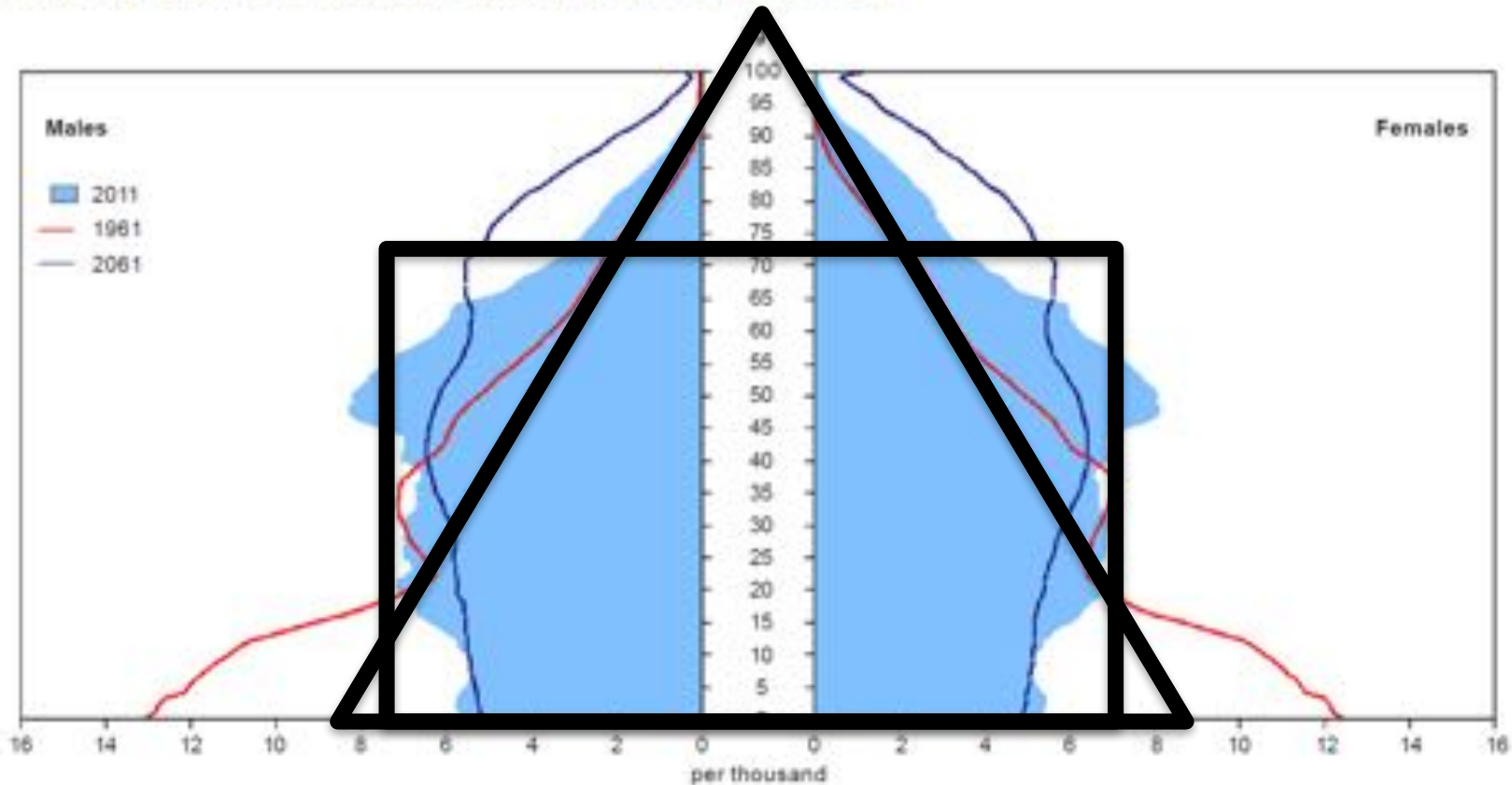


# A common thread...



# Canada shows the same trend: An increasing aging population

Figure 5  
Age pyramids of the population, Canada, 1961, 2011 and 2061



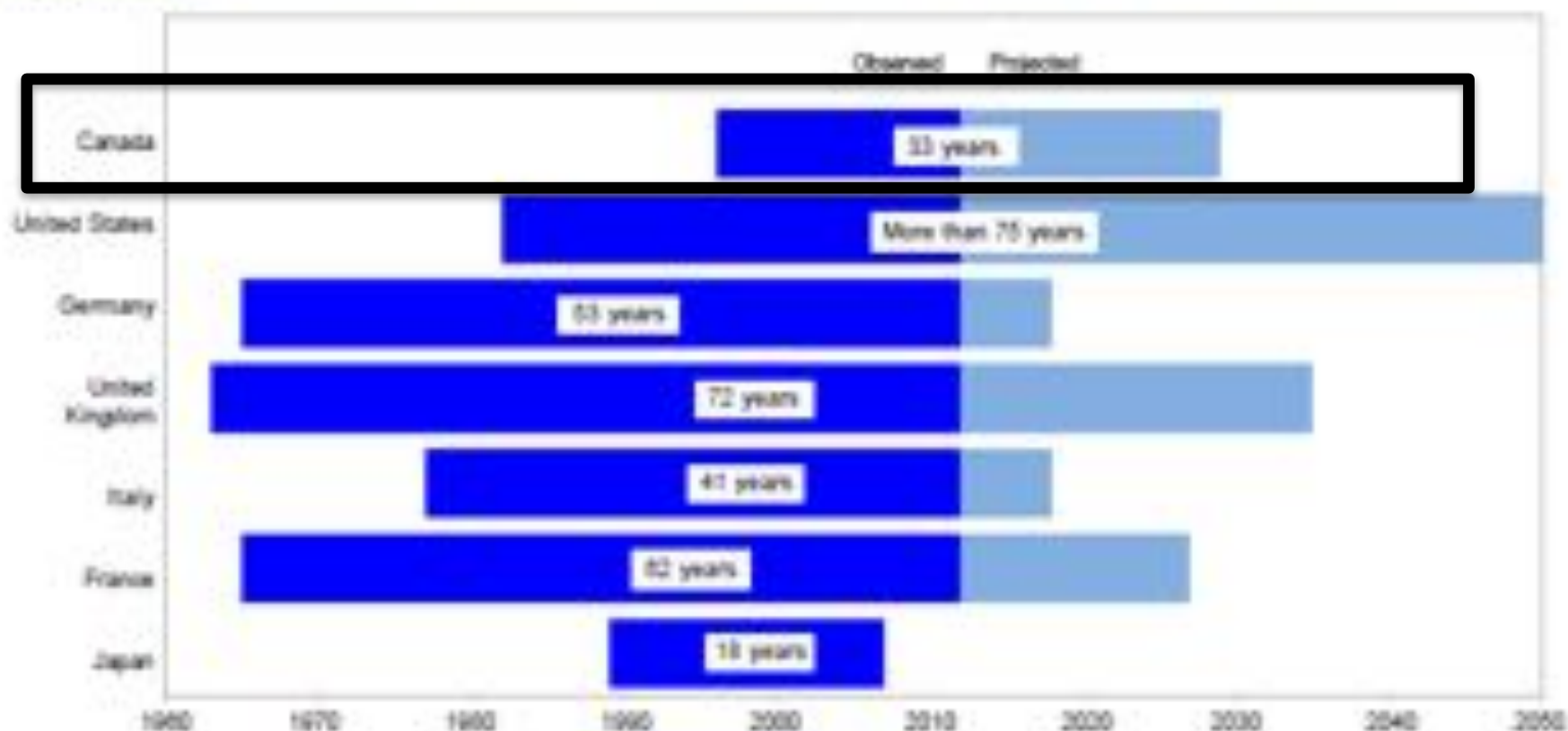
Sources: Statistics Canada. 2010. Population Projections for Canada, Provinces and Territories, 2009 to 2036, catalogue no. 91-520, medium-growth scenario (M1) and Demography Division, Population Estimates Program.

Source: Statistics Canada, *Canadian Demographics at a Glance*, February 19, 2016. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

# Canada has a rapidly increasing aging population

Figure 8

Number of years required for the proportion of the population aged 65 or over to go from 12% to 22%, G8 countries



Sources: Statistics Canada, 2010, Population Projections for Canada, Provinces and Territories 2009 to 2036, catalogue no. 91-520-XPF, medium-growth scenario (M1); Demography Division, Population Estimates Program, Census offices of the United States, 1960 to 2000; Italian National Institute of Statistics, 1975 to 2000; National Institute of Statistics and Economic Studies for France, 1960 to 2000; United Kingdom National Statistics, 1975 to 2000; Statistics Bureau of Japan, 1960 to 2000; Federal Statistical Office of Germany, 2000 to 2010 and Human Mortality Database for Germany, 1960 to 2010.

Source: Statistics Canada, *Canadian Demographics at a Glance*, February 19, 2016. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

## Canadians will be older for longer

Table 2

Life expectancy at birth by sex, G8 countries  
and selected other countries

Country	Males	Females
	in years	
Australia	80	84
Canada	79	83
Denmark	78	82
Finland	78	83
France (metropolitan)	79	85
Germany	78	83
Italy	79	85
Japan	79	86
Norway	79	83
Russia	64	76
Spain	79	85
Sweden	80	84
Switzerland	80	85
United Kingdom	80	84
United States	76	81

Source: INED. 2013. « Tous les pays du monde (2013) », Population et Sociétés, no. 503, September 2013.

Source: Statistics Canada, Canadian Demographics at a Glance, February 19, 2016. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.



## Canada In Review...

- Canada has an **increasing** aging population.
- Canada's aging population is increasing at a **rapid** rate.
- Canadians will be **older for longer.**

*Population Impact Summary:  
More people, faster, and longer*



# How can we address such wide gaps in care?



The Grand Canyon, Photo credit: David Edwards, National Geographic



# **Different models of healthcare**

**Our view of the problem affects:**

- 1. How we describe it**
- 2. What questions we ask**
- 3. What we see as possible solutions**





# **Descriptors**

## **Medical Model vs. Public Health Model**

- Focus on the individual
- Disease diagnosis and individualized treatment plan
- Focus on population and community
- Health Promotion
- Disease prevention

(Reavis et al., 2016)



# Questions Asked

## Medical Model vs. Public Health Model

- EXAMPLES:
  - How do I tailor my evaluation and treatment for this patient?
  - How can our audiologists see more patients?
  - How can we improve treatment outcomes for the individual?
  - How does the disease impact the individuals life/well-being?
- EXAMPLES:
  - How do we meet the hearing healthcare needs of society/community as a whole?
  - What is the impact not only on the individual, but also the family and community?
  - What preventative services can we apply to the community?
  - What is the societal economic burden from the disease?
  - Are there existing systems that we can embed ourselves in?
    - Collaboration with other professionals
    - Early integration/intervention



## **Possible Solutions**

### **Medical Model vs. Public Health Model**

- **EXAMPLES:**
- Can audiologists treat more people in less time?
- Can we integrate audiology technicians to improve efficiency?

- **EXAMPLES:**
- Large scale treatment approaches
- Screenings in primary care offices
- Hearing loss prevention programs



# Social Determinants of Health

- “Social determinants of health are the **conditions** in which people are **born, live, work**, and **age** that **affect** their **health**.” (HealthyPeople.gov)
- Examples:
  - Income
  - gender



# **Examples of how audiologists can be engaged in the community**



# Davis et. al, 2016 outlines “Priorities for Future Service Delivery and Research”

- Education options for hearing providers that better support a variety of different health care systems and needs
  - Ex – Countries with universal healthcare vs. privatized insurance
- Utilization of affordable, low-cost hearing options and other technology
  - Ie – use cellphones, iPads; consider other forms of communication (written)

- Use of **community-delivered care** in addition to the traditional clinic-based services

- Rehabilitation programs for individuals with hearing loss and **their communication partners**

- Greater awareness that accommodations in delivering any healthcare need to consider that older adults are likely to be experiencing hearing loss
  - Ie – having medical recommendations in written format, using amplification systems at meetings

- Use of internet based services to supplement hearing services



# University of Arizona Department of Speech, Language, and Hearing Sciences

## Community Engagement Programs



Protect Your Ears Project  
(PYEP)



Community-delivered



Oyendo Bien  
(Group Adult AR in Spanish)



Community-delivered



Communication Partners



Living Well with Hearing  
Loss  
(Group Adult AR in English)



Communication Partners

**\*Some Community-  
delivered Groups**



# Protect Your Ears Project (PYEP)

**PYEP** is a University of Arizona community outreach initiative that partners with the City of Tucson Parks and Recreation after-school KidCo program to promote:

- Better hearing health hygiene for school-aged children through the use of
  - **Role models** (undergraduate and graduate University of Arizona students)
  - **Age-appropriate classes** highlighting the importance of hearing loss prevention
  - **Interactive activities** to elaborate on the anatomy and physiology of hearing





# Program Data

## The Team

- Principal Investigator
  - Nicole Marrone, Ph.D., CCC-A
- Research Audiologist
  - Giau Le, Au.D., CCC-A
- Four Graduate Research Assistants

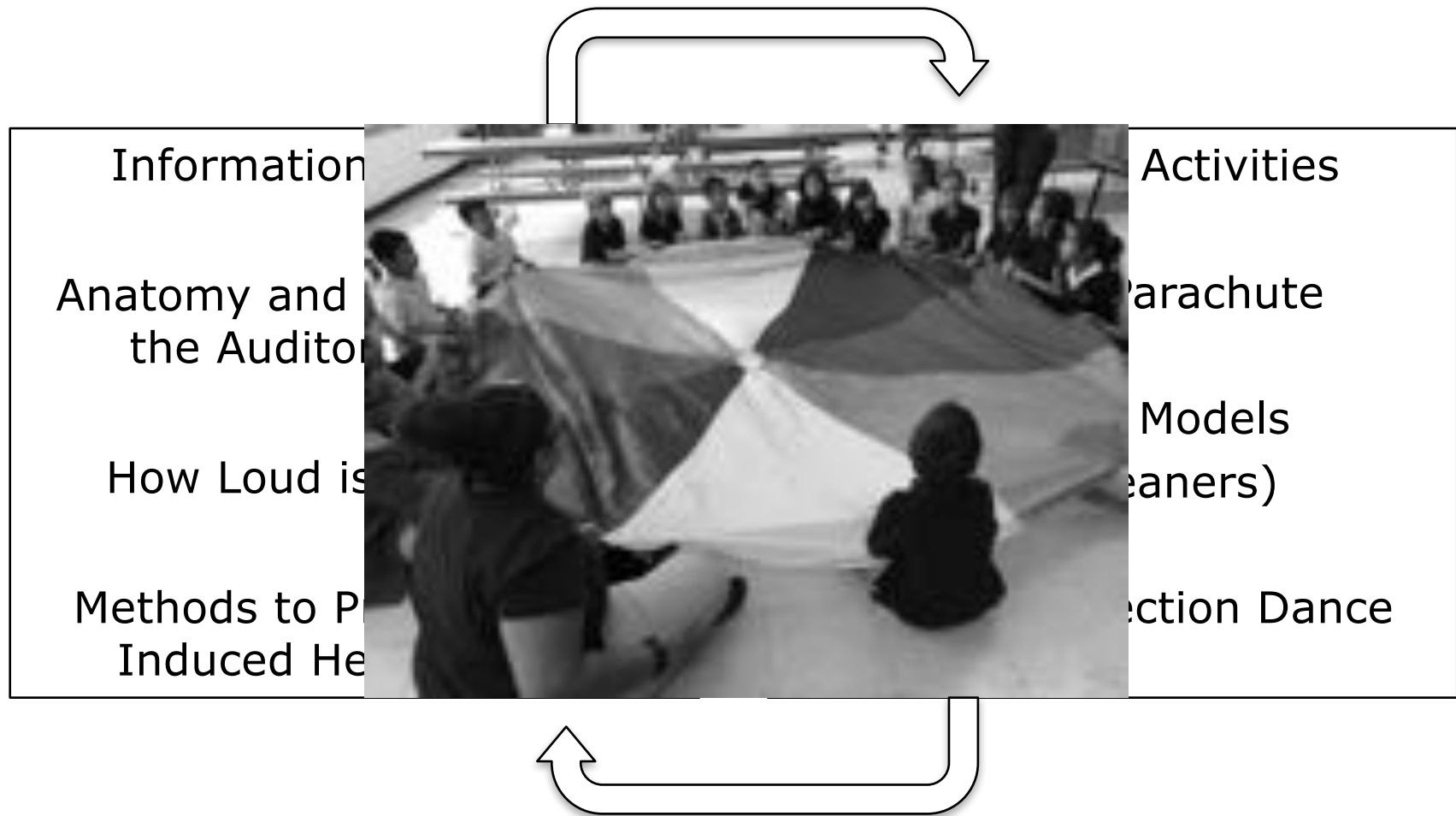
- Approximately 900 children participated since the inception of PYEP in 2012
- Large portion of children from underserved backgrounds
- 2016-2017
  - 11 Site Visits
  - 302 children ages 5-13



*Contributed by: Giau Le, Au.D.*



# Program Content



*Contributed by: Giau Le, Au.D.*



# Lessons Learned

- Starting time for each site varied due to different school schedules across each site
- Equipment needs:
  - Durable
  - Easy to handle and lift
  - Extension cords and power strips
- Facilitators should consider learning more about classroom management skills prior to presentations
- Keep presentations as short as possible, and integrate interactive activity after each presentation to solidify understanding of each topic

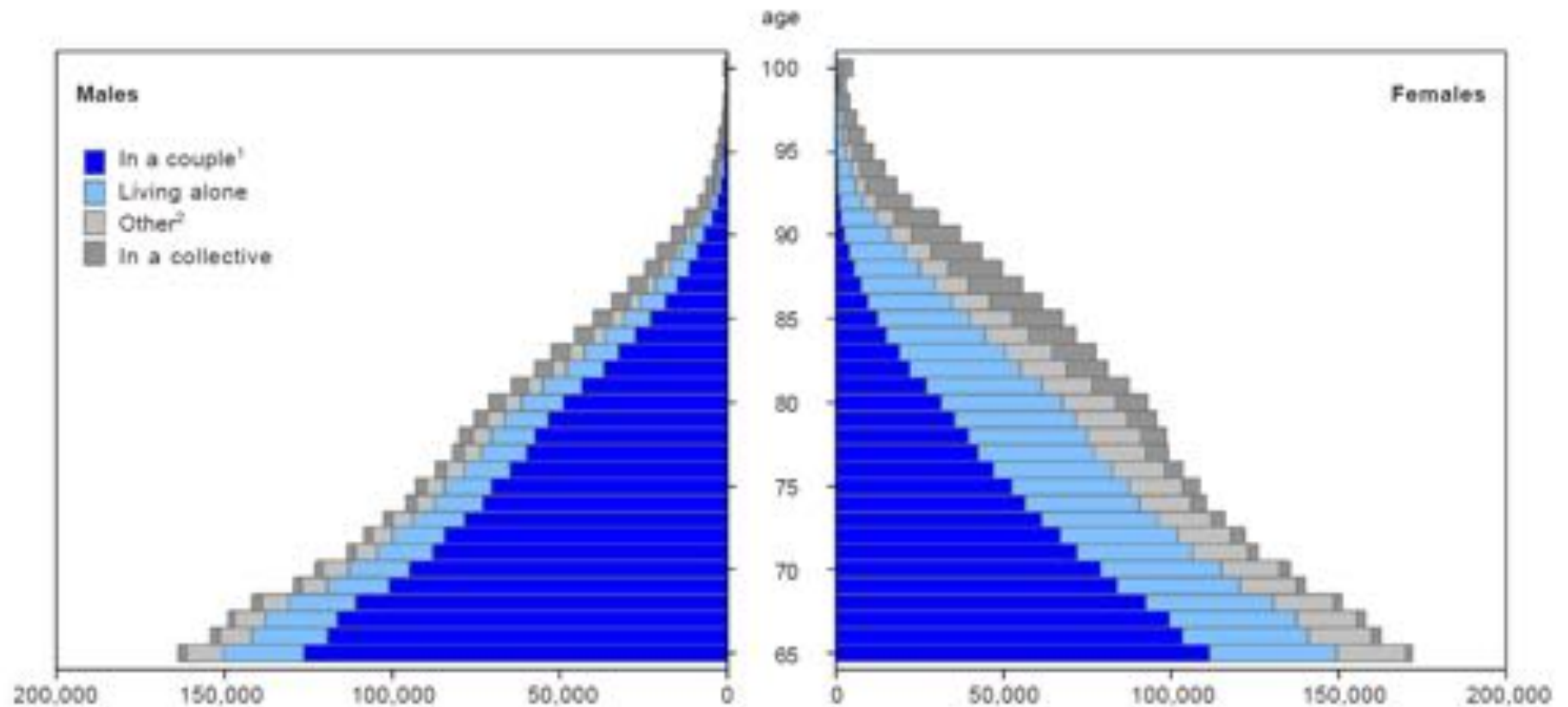


# Engaging Communication Partners is important

- Most Canadians 65+ are not living alone

Figure 41

Age pyramids of the population aged 65 and over by living arrangement and sex, Canada, 2011



1. Refers to married spouses and common-law partners.

2. 'Other' includes seniors who are lone parents, living with other relatives or non-relatives, or adult children living with their parent(s).

Source: Statistics Canada, Census of Population, 2011.

Source: Statistics Canada, Canadian Demographics at a Glance, February 19, 2016. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

# ¡Oyendo Bien! (NIH R21 DC013681)



**¡\*OYENDO\* BIEN!**



# The Oyendo Bien Team

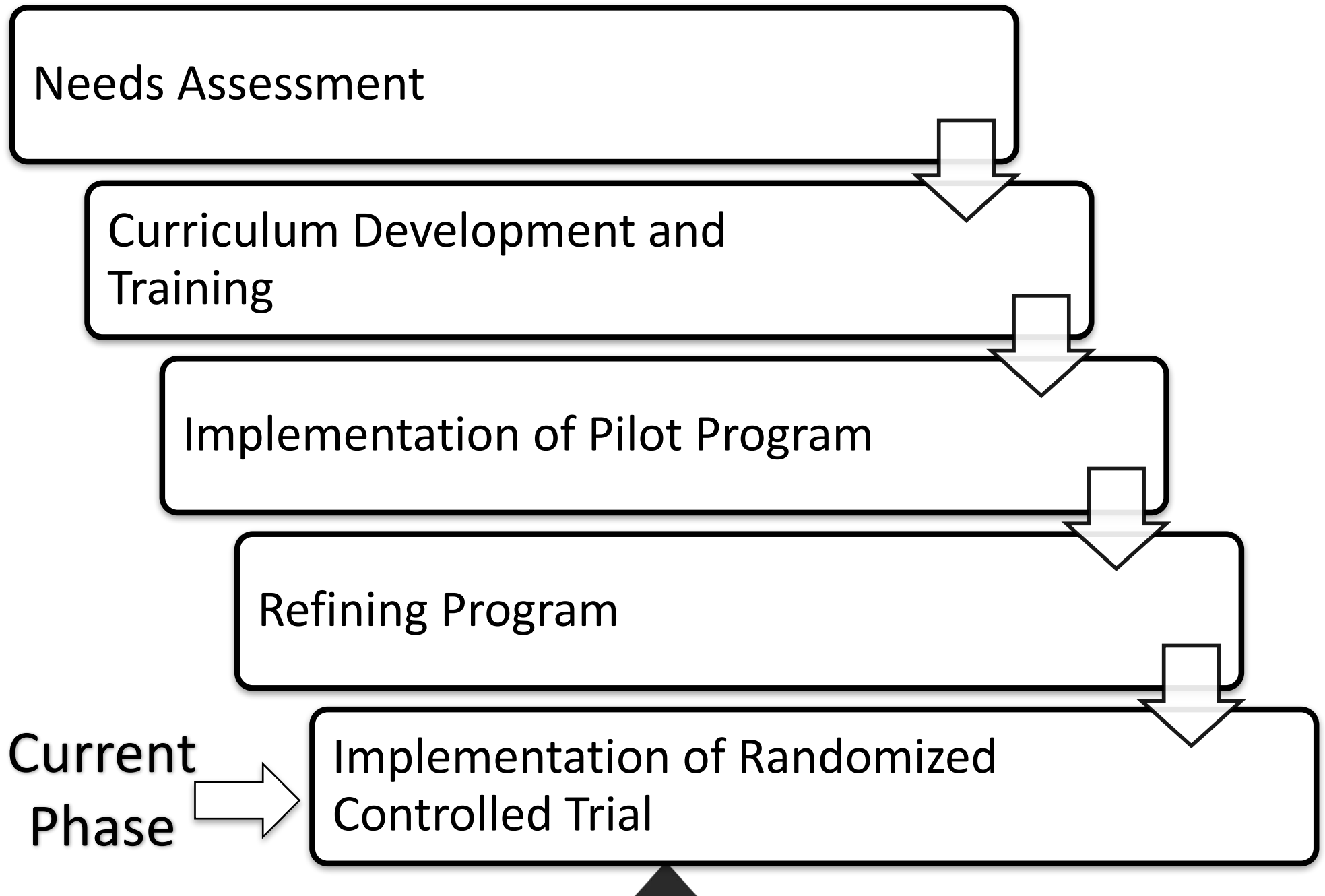


## Oyendo Bien

- Interprofessional collaboration with Public Health, Translation Studies, and a community health center
- Group audiologic rehabilitation program in Spanish for individuals with hearing loss and their communication partners. Delivered in the community.
- Train Community Health Workers (Promotoras) to address hearing loss
- Use participatory methods for rural & cultural adaptation
- Test effectiveness of Promotora-led groups in collaboration with audiologists
- Currently Finishing: Randomized Controlled Trial
  - Waitlist design
  - Monitoring outcomes at 2 weeks, 6 months, 1 year



## Oyendo Bien Phases





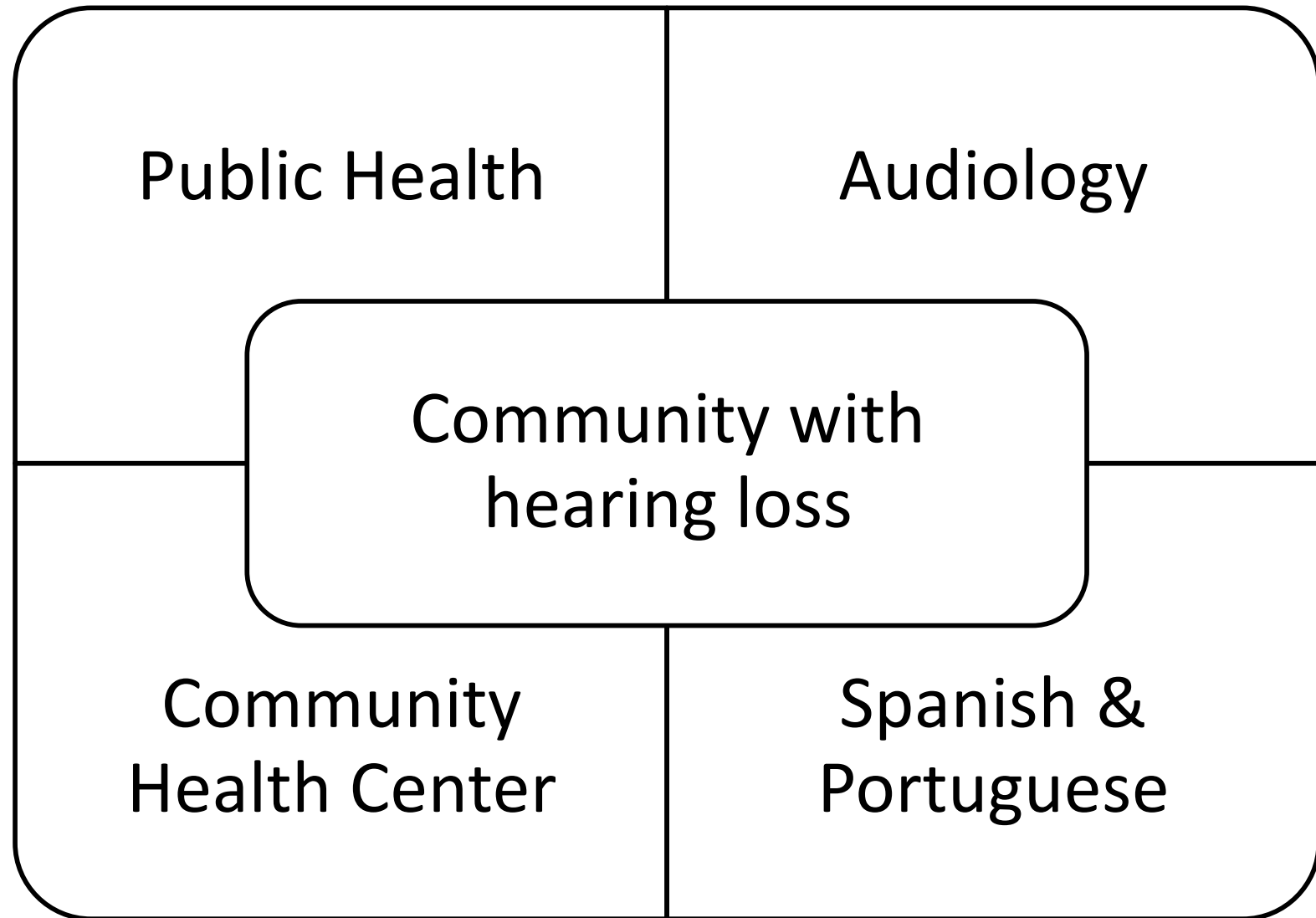
## The need for hearing healthcare is even greater for Mexican Americans in the US



Data based on Lee et al., 1991; Nieman, Marrone, et al. (2016)



# COMMUNITY-BASED PARTICIPATORY RESEARCH (CBPR)



# **Approach from public health to address health disparities: Community Health Workers**

Community  Health care system

- Evidence-based approach for increasing access to care and self-management for chronic conditions
- Proven effectiveness in increasing healthcare utilization, providing health education, and advocating for patient needs

CDC (2011); Peretz et al. (2012); Rosenthal et al. (2010); Viswanathan et al. (2009)



# Who are Community Health Workers or *Promotoras de Salud*?

- Members of the community who are “frontline” public health workers
- May better understand the social determinants impacting a certain community – may have even had personal experiences with this.
- Provide culturally appropriate health education
- Assist the community in understanding and accessing the health care system



***“The nurse’s job is to support the doctor.  
Our job is to support the patient.”***

American Public Health Association (2009)

Rosenthal et al. (2010)



# Community Health Worker Models of Care

- Patient Navigator
- **Health educator**
- Outreach-enrolling-informing agent
- Member of care delivery team (screenings)
- Organizer/advocacy



# Example: Diabetes Management

AzPRC Programs - Pasos Adelante; Salud Si; Vivir Mejor

## Benefits:

- Improvements in knowledge and self-management
- Increased ability to make health behavior changes,
- Reduced number of patients “lost to follow-up”
- More frequent communication and spending more time with patient and family



Ingram, et al. (2005, 2007, 2009, 2012)

Langellier et al. (2014)

Redondo et al. (2010)

Teufel-Shone, Drummond,& Rawiel (2005)

# Community Health Workers and Research



Link between community and academic institution

Salsberg J, Parry D, Pluye P, Macridis S, Herbert S, and Macaulay AC. (2015) Successful Strategies to Engage Research Partners for Translating Evidence into Action in Community Health: A Critical Review. *Journal of Environmental and Public Health*



# Approach from Spanish/Translation Studies

- Process of cultural adaptation goes far beyond simple translation of materials
- Functional translation is focused on **meaning**, rather than back translation for exact grammar/word choice





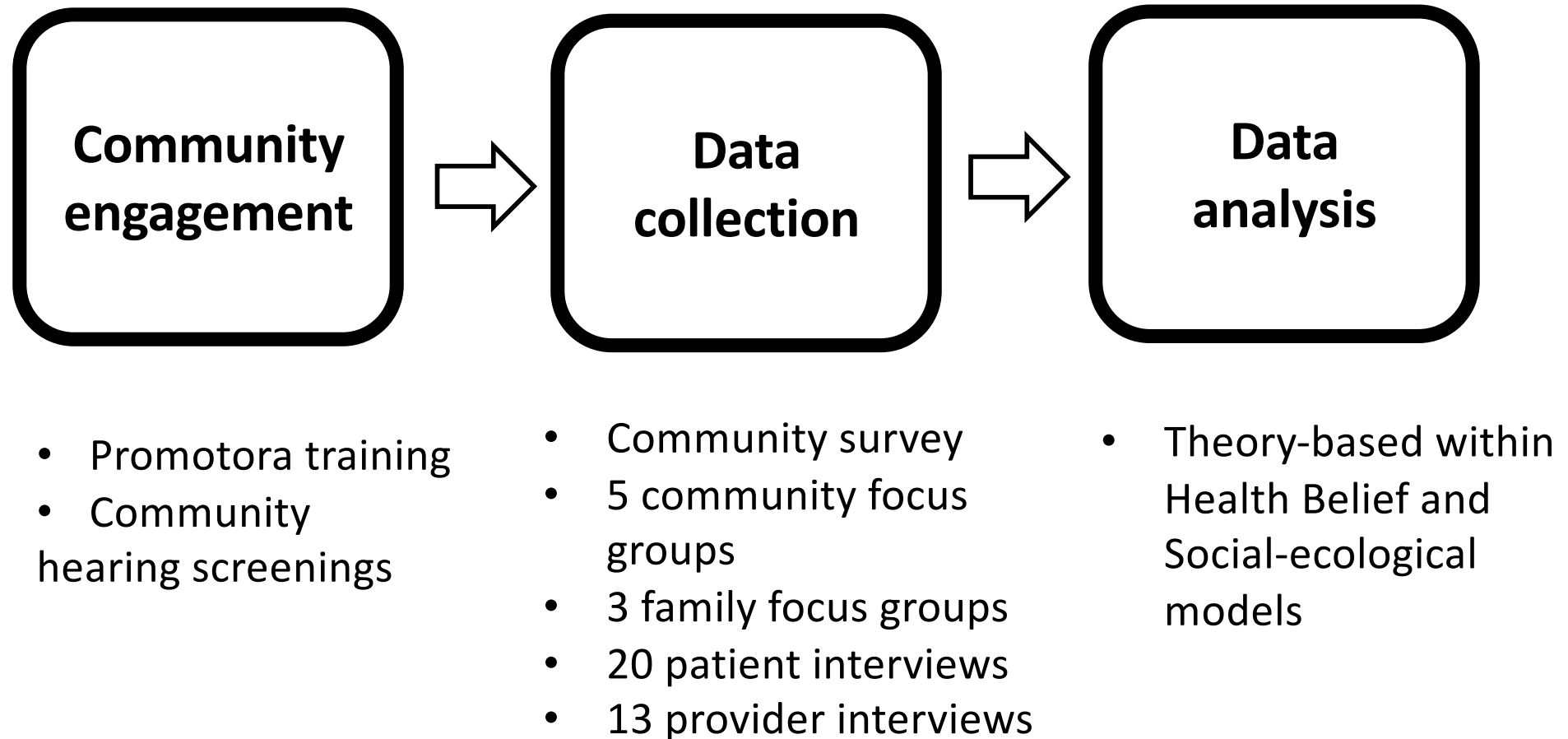
# Federally-qualified Community Health Center

- “Health care safety net” – serving an underserved area or population
- Dedicated health plan, sliding fee scale (Patients pay out of pocket for Specialty care)
- 25 Providers
- No in-house Audiology/ENT
- 49 *Promotoras* (bilingual)
- Staff funding sustained by evidence



# Community Needs Assessment

n = 183



Ingram, Marrone, et al. (2016) *Frontiers in Public Health*  
Sánchez et al. (2017) *Journal American Academy of Audiology*  
Marrone et al. (2017) *Seminars in Hearing*

# Key themes to be addressed

- **Lack of knowledge and resources on hearing loss**
  - Perception that the only intervention is out of reach
  - Trying home remedies delays seeking care
- **Low perceived self-efficacy**
  - Perception there is no solution for old age
  - Social withdrawal and lack of support
  - Frustrations of family
- **Gaps in cues to action**
  - Medical providers not referring to Specialists due to perceived costs
  - Limited local options
  - Limited trust of out-of-pocket care expenses

Ingram et al. (2016)



# Key themes to be addressed

*“I think that they [patients] get really depressed because they cannot hear and they feel isolated and that’s the main thing -- like they really get depressed. They cannot hear, and sometimes you ask them “why aren’t you going with your friends anymore” and they’re like, they cannot hear. ‘What happened with your social life?’ ‘I cannot hear. I cannot do that anymore. I cannot listen to the T.V. I cannot do many things’.”*

*- Primary Care Provider*





**\*OYENDO\* BIEN**

*"Hearing Wellness"*



# **Objectives Prioritized by *Promotoras***

## **① Improve self-efficacy and family efficacy**

- To facilitate empowerment of individual and family to manage the chronic effects of hearing loss

## **② Improve family communication and quality of life**

- To facilitate increased participation in social activities, reduce emotional distress, and improve quality of life for individuals and family members



# Preparing *Promotoras* to Address Hearing Loss (Sánchez et al., 2017)



## Implementation of Freire's Empowerment Education Model

- ① **Listening:** Identify needs in the community as co-learners
- ② **Problem-posing:** Critical-thinking and discussion of complex problems
- ③ **Act-Reflect-Act:** Taking action within the community; apply learning

Wallerstein & Bernstein (1988)

# Reflection

*“Me gustaría más clases para aprender y poder ayudar más a la comunidad. Es un tema que no se había tratado, por lo menos como promotora.”*

I would like more classes and to learn more so that I can help my community. It's a topic (hearing loss) that is not discussed, at least for promotoras.”

**“...The act of participating in community change promotes empowerment...”**

–Paulo Freire





# Oyendo Bien Pilot Study

Program 1: n =10

Program 2: n = 11

- Program 1: At Senior housing
  - 1 hour per week → 1.5-2 hours per week
  - Addressed priorities from needs assessment
  - Transportation provided by Promotoras as needed
  - Facilitated by trained *Promotoras*
  - Focus group
- Program 2: Community room
  - 2 hours per week
  - Additions to curriculum (e.g., more on hearing protection, communicating with physicians)

## 5 week group

- Goals & communication strategies
- How we hear, visual cues
- Coping skills, family & emotions
- Assistive technology, navigating system
- ADA, self-advocacy



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## Persons with Hearing Loss

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Moderate hearing loss

59-90 years (avg. 76)

5 male, 5 female

100% attendance

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## Communication Partners

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Mild hearing loss

40-84 years (avg. 65)

1 male, 10 female

82% attendance

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# **Incorporating feedback from focus groups**

- Solutions come from within the community rather than outside the community
- Developed and adapted the intervention for the community's needs



# Assessments

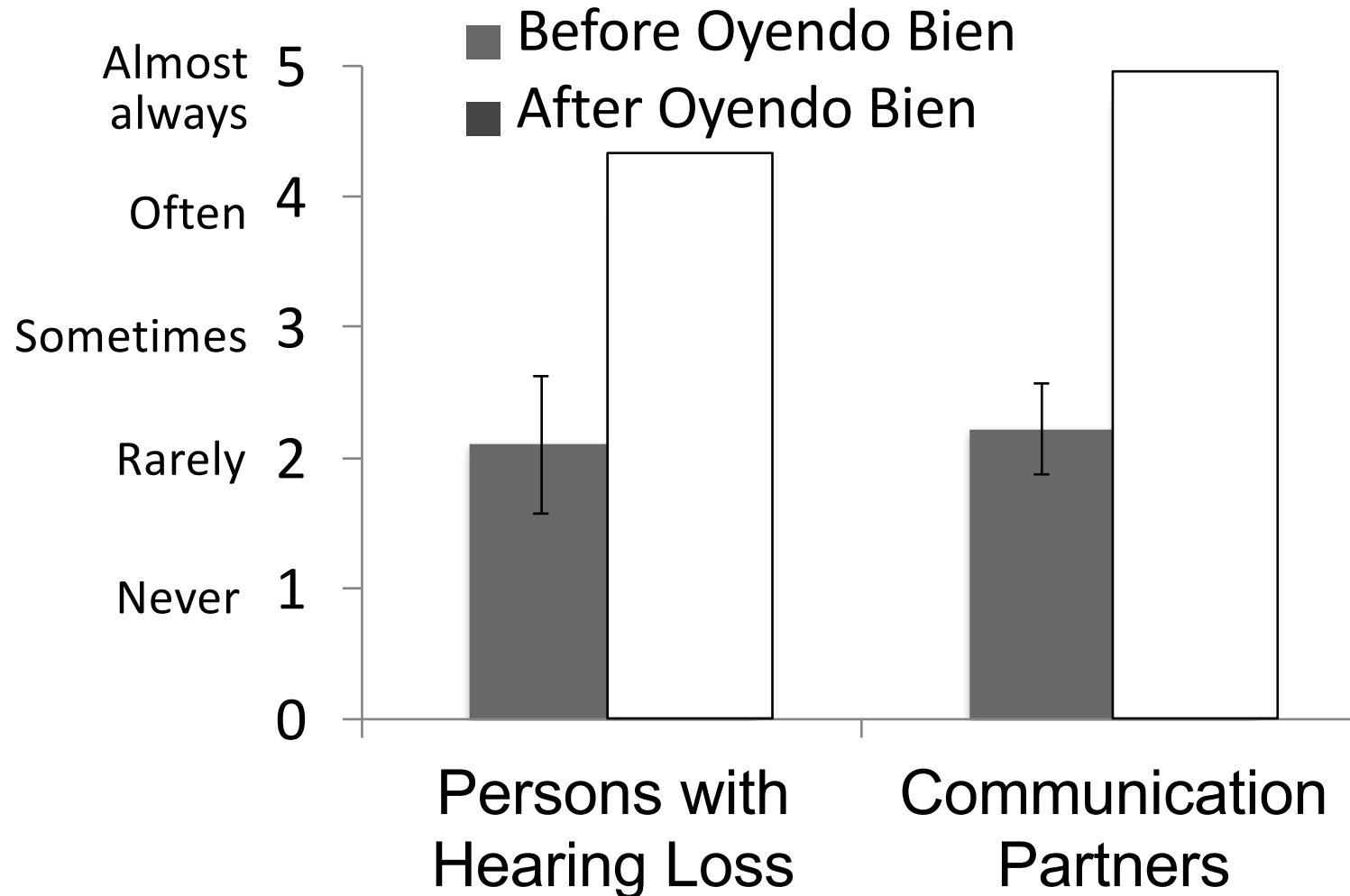


- Participants were assessed Pre and Post intervention
- Baseline assessments adapted from HHIE-S, SAC/SOAC, SOS-Hear
- Outcomes assessments included questions drawn from:
  - Quantified Denver Scale of Communication Function
  - The International Outcomes Inventory – Alternative Intervention and Significant Other version (Noble, 2002)
  - Developed questions to assess social and environmental supports

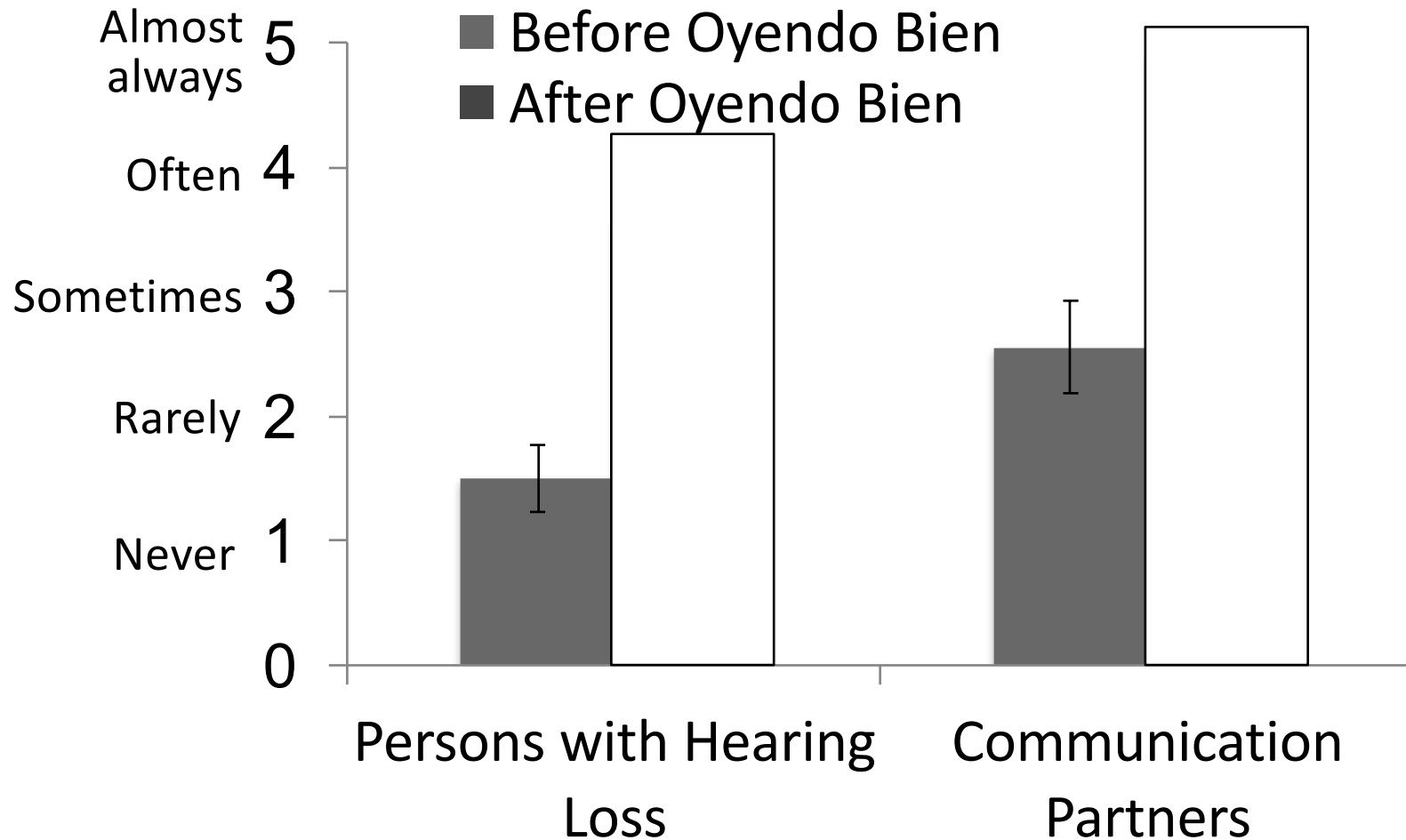
Does a hearing problem cause you to attend religious services less often than you would like?



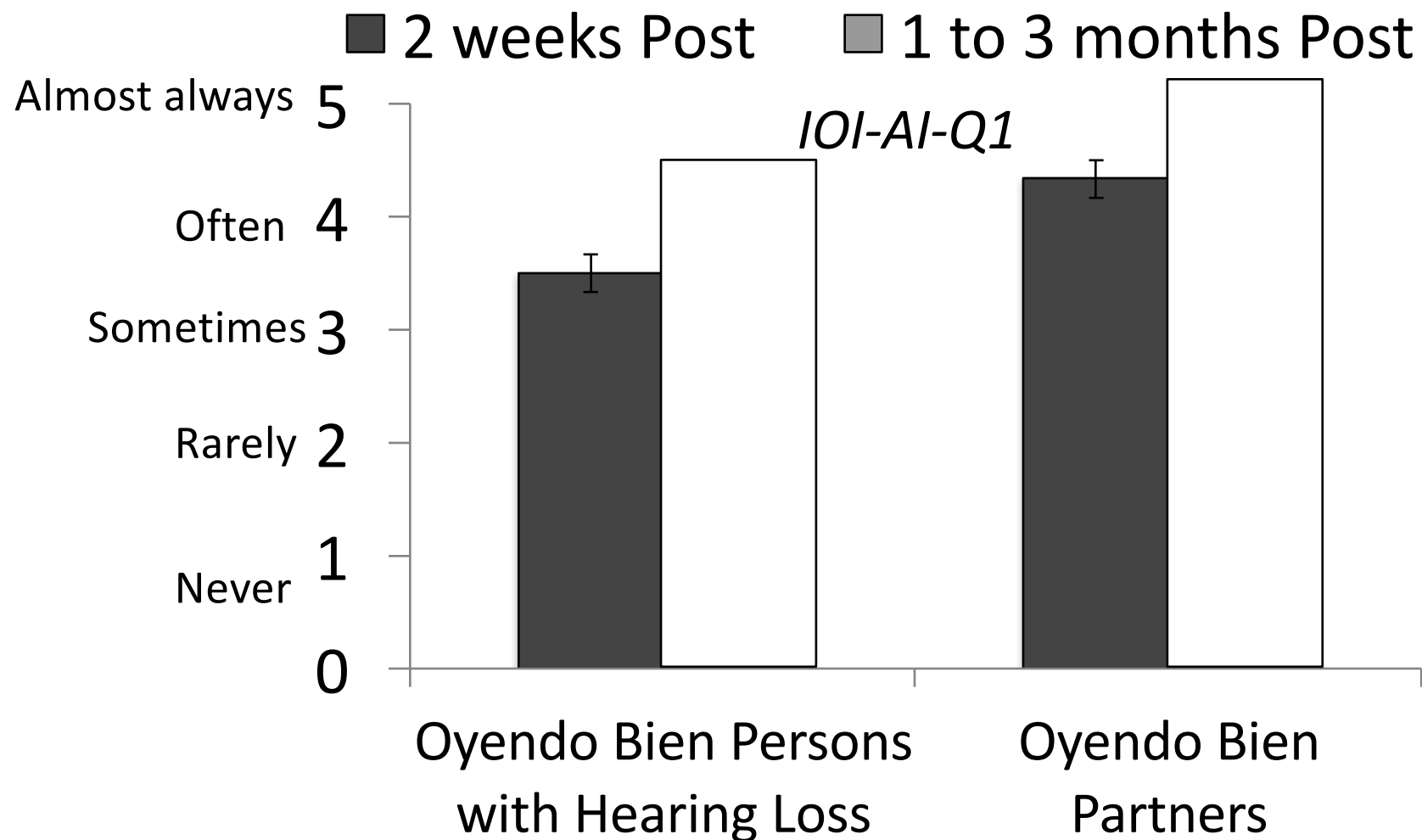
# Spoke slowly & clearly



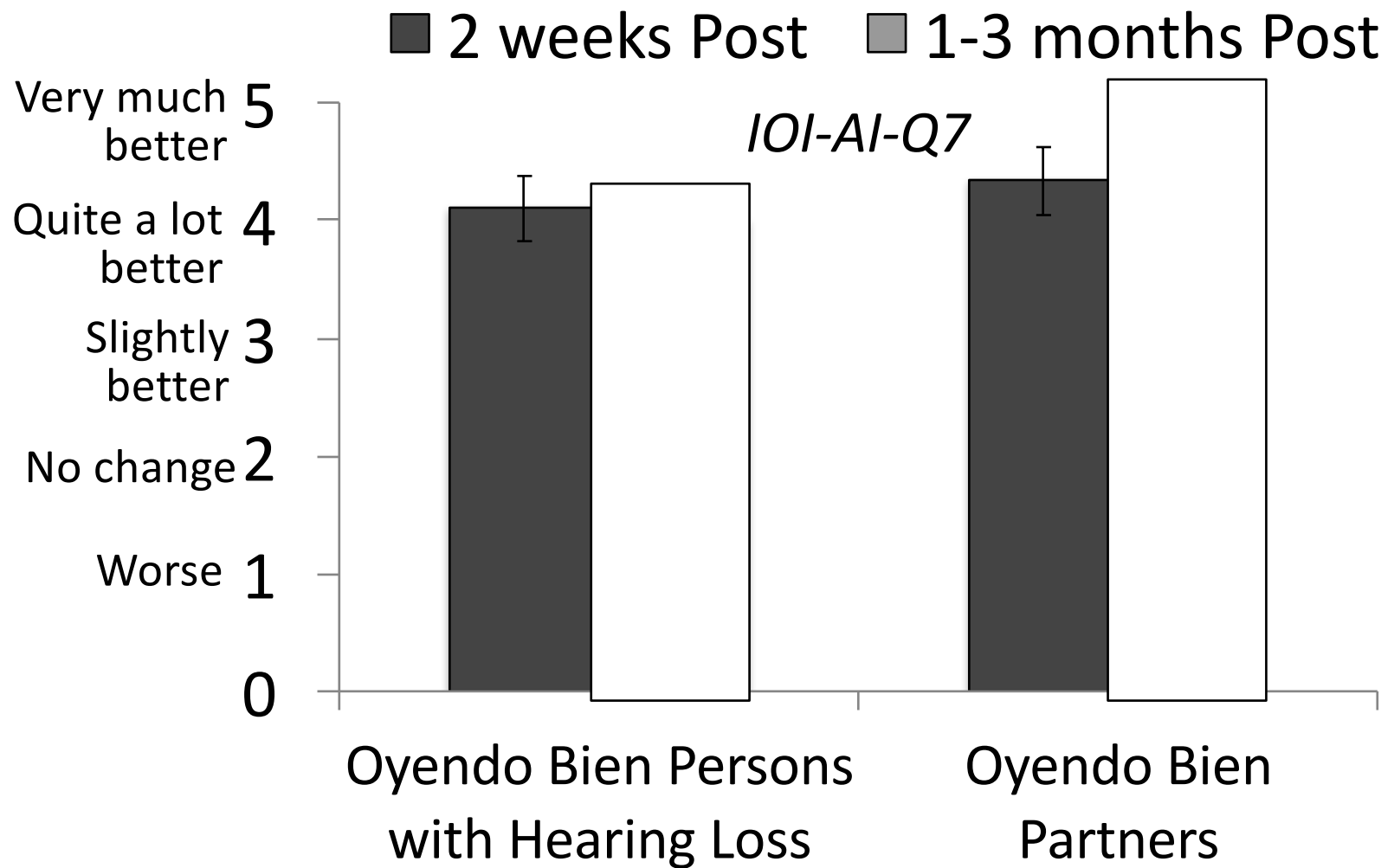
# Helped plan activities so partner with hearing loss can hear and participate



# Daily use of Oyendo Bien strategies



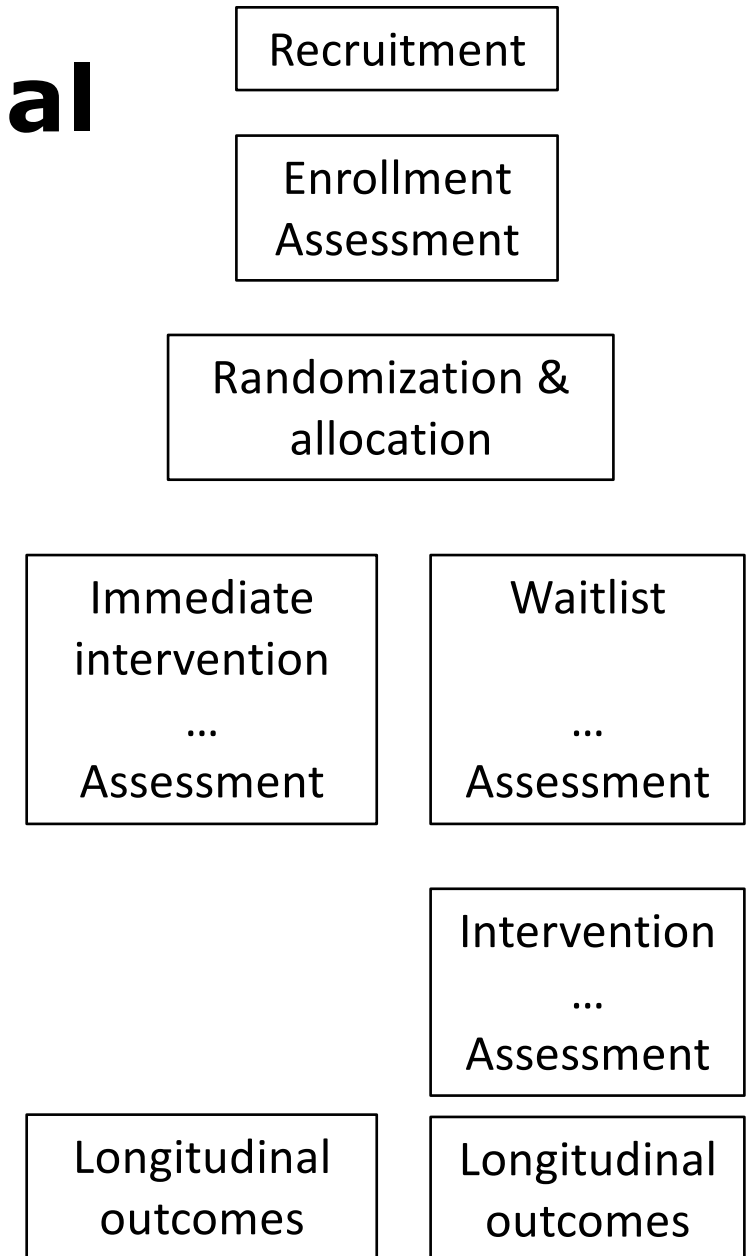
# Enjoyment of Life





# *Oyendo Bien* Randomized Control Trial (R33 phase)

- Planned recruitment:  $n = 160$  (20 for attrition, 20 for exclusion)
- Planned enrollment in study: 120 participants
- 6 cycles



# Longitudinal outcomes (6 months, 1 year)



*"I learned to not get used to the hearing loss just because my father had it. I learned that there were remedies regarding hearing loss by attending the class."*

*"You all taught us something new. Since attending the classes, I had almost no hearing. I now have one hearing aid and I have to go back in three weeks..."*

*"My grandchildren thought that I did not understand them because of a language barrier, but then I told them it was not that. I told them to speak to me slowly. I now know how to take care of my ears better."*

*"I am also more aware of the hearing loss symbol and I found one at my church, so that made me happy."*



# ***Oyendo Bien* Lessons Learned**

- *Promotoras* are a feasible link between unserved community with hearing loss and hearing health care
- There is an on-going process of observing fidelity of intervention and language mediation
- Community members had a continued interest in and need for amplification



James S. and Dyan Pignatelli/UniSource Clinical Program in  
Audiologic Rehabilitation for Adults

## ***Living Well with Hearing Loss***

**Mission:** To maximize communication and quality of life of adults with hearing loss and their communication partners in Southern Arizona



# By the Numbers

- Groups
- Participants
- Attending with communication partners
- In the clinic, in the community
- In English, in Spanish



# Group Approach

- The purpose of the group process is to:
  - increase **self-efficacy** and **improve communication skills** for **persons with hearing loss and their partners** (e.g., Smith & West, 2006; Smith, 2014)
  - Added benefits of providing **counseling experience** for student clinicians that **humanizes** the impact of hearing loss.



# Group Approach

- Support with peer interaction
- Provide successful communication experiences with use of strategies, problem-solving, advocacy and direct coaching.



# Univ of Arizona Hearing Clinic

This program is a **student-lead, supervised semi-independent** clinic experience.

## **First Yr. AuD student involvement:**

- ❖ Observe and reflect on group content and dynamics.
- ❖ Support the student facilitators.

## **Second Yr. AuD involvement:**

- ❖ Semester-long clinic placement as facilitators to lead 2-3 different groups.



*...The participants taught me more than  
any textbook ever has...*

*-3<sup>rd</sup> year AuD student*





# Student Training

- ❖ Pre-group training focused on public speaking & group/individual counseling skill development.
- ❖ Debriefing/Feedback after every class with the clinical instructor.
  - ❖ Reflection activities



Topics Include:

How we hear/anatomy

Types of hearing loss

Impact of hearing loss

Hearing health professionals

Building blocks of communication

Communication breakdowns

Communication Repair

Psychosocial effects of hearing loss

Hearing Assistive Technology

Special Topics



# **Including communication partners**

- **Preminger (2003, 2013)**
- **It is recommended that participants invite their most frequent communication partners to group.**
  - **Often this is a spouse or family member**
- **The communication partners play a vital role in practicing effective communication strategies.**
- **The activities suggested in the workbook and in group are designed to help both the person with hearing loss and the communication partner better understand how hearing loss impacts them both in different ways.**



# Assessment and evaluation

- Self Assessment of Communication
- Significant Other Assessment of Communication
- SOS-HEAR
- SESMQ
- IOI-AI
- Program-specific evaluation



# “Mission **MADE** Possible”

- ❖ Participants are given communication tools and provided with a mission to complete with the assistance of a coach, who observes and supports from a distance.
- ❖ Participant Goals:
  - ❖ Advocacy,
  - ❖ Increased confidence in tools/skills
  - ❖ Successful communication



# Patient and Family Centered Counseling

- ❖ Adapt to needs of the group and to the needs of the individual
- ❖ Flexible approach to facilitating curriculum themes/modules
- ❖ Practical counseling skill development for students



## Student Perspective

***"I think the most important thing I learned throughout the semester is that each individual has different needs and different expectations for the class. ... I learned quickly that we were going to need to be flexible"***

**-1<sup>st</sup> Year AuD Student**

# Incorporating Technology

- It is important to be sure that the class is accessible for everyone who is participating.
  - Loop system, soundfield system, Pocket Talkers (routine)
  - CART services (ordered as necessary)
  - All videos are captioned
  - Workbook with printed materials to follow along
  - Participant's personal amplification is checked and used as well



# How can I expand my reach?

- Invite patients to advocate for themselves and share information with their families when comfortable
  - EX: Create a communication strategies brochure that targets not only the patient, but their partner
- Introductory letter
- Person-centered needs assessment
- Connect with other audiologists
- Visit an existing program or consult with audiologists implementing AR in practice





# How can I expand my reach?

- Find community partners: there are other people interested in hearing loss in many already existing systems: education, broader healthcare, living facilities, the library
- Consider different entry points and gate keepers
- Community-engaged outreach
- Outreach with primary care, public health
- Go where the people go: library
- Engage with Community Health Workers



# Resources for Community-engaged Audiologists

- Ida Institute GROUP AR tool

<http://idainstitute.com/toolbox/group/>

- Active Communication Education Curriculum and example videos

<https://shrs.uq.edu.au/research/research-centres-and-units/communication-disability-centre/active-communication-education-program>

- ASHA SIG 7 Aural Rehabilitation and Its Instrumentation

<http://www.asha.org/SIG/07/About-SIG-7/>

- University of Arizona group AR programs

<http://lwhl.arizona.edu>



# Acknowledgments

- University of Arizona Audiology Clinical Faculty
- University of Arizona Audiology students
- Giau Le, AuD, CCC-A
- Fran Harris, PhD, CCC-A/SLP
- Maia Ingram, MPH
- Pignatelli family
- Tom Muller, AuD, CCC-A
- Participants

